aris; 2^{us} basi ad apicem latescens; 3^{us} et sequentes lineares; 4^{us} 3° brevior, 5° longior; clava fusiformis, articulo 5° paullo latior et duplo longior: thorax ovatus: prothorax transversus, brevissimus: mesothoracis scutum unisulcatum, fere planum, longitudine paullo latius; parapsidum suturæ remotæ, optime determinatæ; scutellum subrotundum, bisulcatum: metathorax transversus, brevis: petiolus brevissimus: abdomen ovatum, supra planum, subtus carinatum, apice acuminatum, thorace paullo longius et latius: pedes graciles, simplices, subæquales: alæ latæ; nervus ulnaris humerali duplo longior, radialis nullus, cubitalis sat longus; stigma minutum.

Sp. 1. Cirr. Teridæ, Fem. *Nigro-cupreus, antennæ piceæ, pedes fusco-fulvi, femora nigro-cuprea, alæ limpidæ.*

Nigro-cupreus: oculi et ocelli rufi: antennæ piceæ; articuli 1^{us} et 2^{us} nigri; pedes nigro-cuprei; trochanteres picei; genua flava; metatibiæ apice fulvæ; mesotibiæ fulvæ, fusco cinctæ; propedum tibiæ fulvæ, tarsi fusci; meso- et metatarsi fusci, basi fulvi: alæ limpidæ; squamulæ piceæ; nervi proalis fulvi, metalis flavi. (Corp. long. lin. 1; alar. lin. 2$\frac{1}{3}$.)

Found by Dr. Greville, near Edinburgh.

Fem. C. Sotadi affinis? corpus angustum, convexum, obscurum, scitissime squameum parce hirtum: caput transversum, breve, thorace paullo latius; vertex latus; frons abrupte declivis: antennæ graciles, extrorsum crassiores, thorace paullo longiores; articulus 1^{us} sublinearis; 2^{us} longicyathiformis; 3^{us}, 4^{us}, et 5^{us} lineares, subæquales; clava longifusiformis, acuminata, articulo 5° plus duplo longior: thorax ovatus: prothorax transversus, brevis: mesothoracis scutum longitudine paullo latius; parapsidum suturæ optime determinatæ; scutellum subrotundum: metathorax transversus, mediocris: petiolus brevissimus: abdomen fusiforme, læve, nitens, supra depressum, subtus carinatum, apice attenuatum et acuminatum, thorace angustius et multo longius; latera subcompressa: pedes simplices, subæquales: alæ mediocres; nervus ulnaris humerali multo longior, radialis nullus, cubitalis brevis.

Sp. 2. Cirr. Brunchus, Fem. *Ater, abdomen nigro-cupreum, antennæ piceæ, pedes flavi, femora nigra, alæ limpidæ.*

Ater: oculi et ocelli rufi: antennæ piceæ, basi nigræ: abdomen nigro-cupreum: pedes flavi; coxæ nigræ; trochanteres picei; femora nigra; tarsi apice fusci: alæ limpidæ; squamulæ piceæ; nervi proalis fusci, metalis flavi. (Corp. long. lin. $\frac{3}{4}$; alar. lin. 1$\frac{1}{3}$.)

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XXVI.—*Hints on the Anatomico-Physiological Differences in the Organization of Stems.* By Dr. M. J. Schleiden.*

I have been constantly surprised in reading the numerous controversies on the differences between monocotyledonous and dicotyledonous stems, to find that, in general, they con-

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Sp. 1. Cirr. Teridæ, Fem. *Nigro-cupreus, antennæ piceæ, pedes fusco-fulvi, femora nigro-cuprea, alæ limpidæ.*

Nigro-cupreus: oculi et ocelli rufi: antennæ piceæ; articuli 1^{us} et 2^{us} nigri; pedes nigro-cuprei; trochanteres picei; genua flava; metatibiæ apice fulvæ; mesotibiæ fulvæ, fusco cinctæ; propedum tibiæ fulvæ, tarsi fusci; meso- et metatarsi fusci, basi fulvi: alæ limpidæ; squamulæ piceæ; nervi proalis fulvi, metalis flavi. (Corp. long. lin. 1; alar. lin. $2\frac{1}{3}$.)

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Sp. 2. Cirr. Brunchus, Fem. *Ater, abdomen nigro-cupreum, antennæ piceæ, pedes flavi, femora nigra, alæ limpidæ.*

Ater: oculi et ocelli rufi: antennæ piceæ, basi nigræ: abdomen nigro-cupreum: pedes flavi; coxæ nigræ; trochanteres picei; femora nigra; tarsi apice fusci: alæ limpidæ; squamulæ piceæ; nervi proalis fusci, metalis flavi. (Corp. long. lin. $\frac{3}{4}$; alar. lin. $1\frac{1}{3}$.)

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Sp. 1. Cirr. Teridæ, Fem. *Nigro-cupreus, antennæ piceæ, pedes fusco-fulvi, femora nigro-cuprea, alæ limpidæ.*

Nigro-cupreus: oculi et ocelli rufi: antennæ piceæ; articuli 1^us^ et 2^us^ nigri; pedes nigro-cuprei; trochanteres picei; genua flava; metatibiæ apice fulvæ; mesotibiæ fulvæ, fusco cinctæ; propedum tibiæ fulvæ, tarsi fusci; meso- et metatarsi fusci, basi fulvi: alæ limpidæ; squamulæ piceæ; nervi proalis fulvi, metalis flavi. (Corp. long. lin. 1; alar. lin. 2½.)

Found by Dr. Greville, near Edinburgh.

Fem. C. Sotadi affinis? corpus angustum, convexum, obscurum, scitissime squameum parce hirtum: caput transversum, breve, thorace paullo latius; vertex latus; frons abrupte declivis: antennæ graciles, extrorsum crassiores, thorace paullo longiores; articulus 1^us^ sublinearis; 2^us^ longicyathiformis; 3^us^, 4^us^, et 5^us^ lineares, subæquales; clava longifusiformis, acuminata, articulo 5° plus duplo longior: thorax ovatus: prothorax transversus, brevis: mesothoracis scutum longitudine paullo latius; parapsidum suturæ optime determinatæ; scutellum subrotundum: metathorax transversus, mediocris: petiolus brevissimus: abdomen fusiforme, læve, nitens, supra depressum, subtus carinatum, apice attenuatum et acuminatum, thorace angustius et multo longius; latera subcompressa: pedes simplices, subæquales: alæ mediocres; nervus ulnaris humerali multo longior, radialis nullus, cubitalis brevis.

Sp. 2. Cirr. Brunchus, Fem. *Ater, abdomen nigro-cupreum, antennæ piceæ, pedes flavi, femora nigra, alæ limpidæ.*

Ater: oculi et ocelli rufi: antennæ piceæ, basi nigræ: abdomen nigro-cupreum: pedes flavi; coxæ nigræ; trochanteres picei; femora nigra; tarsi apice fusci: alæ limpidæ; squamulæ piceæ; nervi proalis fusci, metalis flavi. (Corp. long. lin. ¾; alar. lin. 1⅓.)

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Sp. 1. Cirr. Teridæ, Fem. *Nigro-cupreus, antennæ piceæ, pedes fusco-fulvi, femora nigro-cuprea, alæ limpidæ.*

Nigro-cupreus: oculi et ocelli rufi: antennæ piceæ; articuli 1^{us} et 2^{us} nigri; pedes nigro-cuprei; trochanteres picei; genua flava; metatibiæ apice fulvæ; mesotibiæ fulvæ, fusco cinctæ; propedum tibiæ fulvæ, tarsi fusci; meso- et metatarsi fusci, basi fulvi: alæ limpidæ; squamulæ piceæ; nervi proalis fulvi, metalis flavi. (Corp. long. lin. 1; alar. lin. 2$\frac{1}{3}$.)

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Sp. 2. Cirr. Brunchus, Fem. *Ater, abdomen nigro-cupreum, antennæ piceæ, pedes flavi, femora nigra, alæ limpidæ.*

Ater: oculi et ocelli rufi: antennæ piceæ, basi nigræ: abdomen nigro-cupreum: pedes flavi; coxæ nigræ; trochanteres picei; femora nigra; tarsi apice fusci: alæ limpidæ; squamulæ piceæ; nervi proalis fusci, metalis flavi. (Corp. long. lin. $\frac{3}{4}$; alar. lin. 1$\frac{1}{3}$.)

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tain only comparisons between the so-called woody trunks of palms, and those of the dicotyledonous forest trees of our zone, the consideration being for the most part overlooked, that things wholly dissimilar, and which will not admit of comparison, are thus compared. The palm-stems, for example, originate from the undeveloped interfoliar parts, but our dicotyledonous woody stems from the developed parts; and this distinction is so very essential for plants with numerous series of woody bundles, that the stalk of a pink, and a culm of grass, do not differ so much as the latter and the stalk of a bulb. It appears to me, that even if the most correct, certainly not the shortest expression, has yet been found for the distinction between the two great divisions of the Phanerogamia, with reference to the structure of their stems, notwithstanding all the researches of the most eminent naturalists. In stems in general the following differences occur, which rest on the development, number and arrangement, direction and structure of the vascular (woody) bundles.

1. The vascular bundles, whose development always proceeds from the interior to the exterior, are either limited or unlimited in their growth. Commonly every vascular bundle consists of three different physiological parts, namely of an extremely delicate, rapidly developing tissue, of most tender texture, in which new cells are continually generated; these are deposited in various configurations, in two different directions, viz. towards the exterior, in the shape of a peculiar, very thick-walled cellular, more or less elongated tissue (*liber*); and to the interior, in gradual succession (subjected to the gradual expansion in length of the part), in the form of annular, spiral, reticulate, and porous vessels; and of ligneous cells, the latter either uniform, or differing from each other, forming the wood, properly so called. Up to a certain period the development of the vascular system in the Monocotyledons and Dicotyledons proceeds uniformly; but then, in Monocotyledons the active formative cellular tissue, with delicate walls, suddenly changes; the partitions of the cells become thicker, their generating power ceases, and, when all the surrounding cells are fully developed, they also assume a form entirely peculiar, and cease to convey gum, mu-

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cus, &c., in short all thick formative saps. At the period when the development of these cells ceases, they are called by Mohl *vasa propria*. From this cause all further development of these vascular bundles is rendered impossible, and therefore I call them *terminated*, or "limited." In Dicotyledons, on the contrary, this tissue, which is then termed *cambium*, Auct., *couche régénératrice*, Mirb., retains, during the whole lifetime of the parts of the plant, its vital formative power; it continues to develope new cells, and by means of them increases the mass, as they go on adding partly to the exterior portion (*liber*), and partly to the interior (wood), to infinity. This happens according to the climate and nature of the plant, either pretty continuously, as for instance in the *Cacteæ**, or by strong periodical advances alternating with almost entire cessations, as in our forest trees. In the latter, one may be convinced by perseverance and delicate manipulation, that the stem forms a continuous tissue, from the pith to the bark, in all periods of its life, and that the bark is never separated from the stem; what has been so considered is only a rent produced by manipulation of the delicate formative tissue, which is in a great measure present, even during the winter, constituting the foundation of the new annual zones, although compressed, and filled with gum, starch, &c. In the spring, being expanded and swollen by the new current of sap, it is deprived of its contents by their solution. In all cases we may convince ourselves that the new cellular tissue is always formed within that already existing, and, in fact, in primitive cells, by means of cytoblasts, in the same manner as I have already previously demonstrated with regard to other cells. Indeed, the young cells are constantly formed on the upper *or* lower (I regret that I have not yet paid sufficient attention to this point,) end of the elongated primitive cells, and by means of their expansion lengthwise grow through them, and their contact with the other end of the cell appears to call into existence a new cell

* For this reason the observation of the whole process is most easy in the Cactuses. In general they have also remissions of growth, which do not altogether correspond with the annual impulses, although they produce similar appearances. The cause is yet wholly unknown.

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This difference between limited and unlimited vascular bundles affords the *only universal* distinction between Monocotyledons and Dicotyledons. In the annual Dicotyledons the vascular bundle, checked in its further development by the death of the plant, has, it is true, in so far some similarity to the Monocotyledons; yet, with close research, the difference is distinctly apparent, for the formative layer constantly retains to the last moment its generating power; and upon this, in fact, is founded the lignification of annual plants, arising from a consequent prevention of the flowering, *e. g.*, in *Reseda odorata* and *Cheiranthus annuus.* For those who find an advancement of science solely and wholly in the employment of new terms, and who are tired of the good old division into *Monocotyledons* and *Dicotyledons*†, I propose, instead of the nonsensical division into *Endogens* and *Exogens*, the denomination of *Teleophytes* for *Monocotyledons*, and *Synechophytes* for *Dicotyledons*, founded on the preceding observations.

2. The second distinction among the various organizations of stems, is founded on the number and arrangement of the vascular bundles, namely, whether only one simple circle, or several concentric circles, are present. In the first case they generally approach sooner or later close to each other, and thus form a hollow closed cylinder, which is only traversed by greater or smaller bands of the compressed parenchyma, from within outwards: these bands are called

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The case of a simple circle of closed vascular bundles only occurs, so far as I know, in the stems of Dicotyledons. In Monocotyledons, on the contrary, it is, I believe, the regular structure of the roots.

The other case, of several concentric circles of vascular bundles, exists throughout the Monocotyledons, and is to be found among the Dicotyledons in the *Piperaceæ*, *Nyctagineæ*, *Amaranthaceæ*, *Chenopodeæ*, and perhaps in many others, the structure and formation of whose stems are not at present well known. Meanwhile the chief distinction between Monocotyledons, namely that of the closed or unclosed vascular bundles, comes here into action, and gives rise to an entirely peculiar woody structure in the before-named Dicotyledons. Dr. Robert Brown first drew my attention to this in the stem of a *Pisonia*, (*unknown Burmese tree*, in Lindley's 'Introduction to Botany', p. 80, fig. 40.). Now, as all these vascular bundles, arranged in various circles, continue to be

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developed until at last they almost form a continuous mass, the parenchyma which previously separated them is thereby compressed into some small insulated patches, that appear scattered through the completely formed wood in little narrow vertical bands, which, in regard to their origin, may rightly be termed vertical medullary rays. On the outside of these cords are found in the wood very frequently *spiroidæ* still unaltered, forming the commencements of the outer vascular bundles. I have pursued the entire development of this peculiar structure in two species of *Pisonia*, in *Amaranthus viridis*, *Beta Cicla*, *Atriplex hortensis*, *Chenopodium Quinoa*, *&c.* Many other plants of the families mentioned, such as the *Piperaceæ*, which I could only examine under certain circumstances, prove, by their structure, that this peculiarity is quite general in those families.

A curious form of wood probably belongs here, (and perhaps the whole family of the *Crassulaceæ*), but I had no opportunity of following up the history of their development*. In the old stem of an undetermined *Echeveria* I found, for instance, an entire uniform mass of wood, formed of prosenchymatous cells without vessels, and scattered therein small vertical cords of a very delicate-walled parenchyma, in the midst of which ran spiral vessels, most of which might still be unrolled.

3. A third point of importance, arising from the essential differences of stems, is the relation of the axis to the parts given off from its periphery, the leaves and buds. Hereto belong a multiplicity of phenomena.

A. A phænomenon common to all Dicotyledons, is the formation of nodes. A lateral organ in fact originates universally among Dicotyledons only from the nodes; the part so called in botanical descriptions is not here intended (for that is mostly a crude conception of a somewhat isolated form of

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In the Monocotyledons this formation of true nodes is probably far more rare, if indeed it occurs at all; for I am yet in doubt whether a real anastomosis of the vascular system takes place in the so-called nodes of the grasses, for the purpose of giving off bundles to the lateral parts. Thus much at least is certain, that in Monocotyledons the anastomosis of the vascular system decidedly takes place more rarely than in Dicotyledons. If it could be ascertained that the above characteristic formation of nodes nowhere occurred amongst the Monocotyledons, this would certainly afford a primary and general distinction between them.

In Acotyledons the decided dicotyledonous formation again occurs; and many unnecessary words would have been spared on the pretended difference in the stems of Ferns if the formation from which it is said to deviate (viz. the dicotyledonous stem) had been studied, not in a limited consideration of the Oak or the Lime, but in the various types of the different families. I believe it would not be very difficult for me to demonstrate all the modifications of the woody tissue of ferns, which do not depend on the closing up of the vascular bundles, but only on number, situation and mutual combination, as occurring in all essential points in the *Euphorbiaceæ* or the *Cacteæ*.

B. In every case where vascular bundles go off to a peripherical organ, they must decussate with the subsequently

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In the Monocotyledons this formation of true nodes is probably far more rare, if indeed it occurs at all; for I am yet in doubt whether a real anastomosis of the vascular system takes place in the so-called nodes of the grasses, for the purpose of giving off bundles to the lateral parts. Thus much at least is certain, that in Monocotyledons the anastomosis of the vascular system decidedly takes place more rarely than in Dicotyledons. If it could be ascertained that the above characteristic formation of nodes nowhere occurred amongst the Monocotyledons, this would certainly afford a primary and general distinction between them.

In Acotyledons the decided dicotyledonous formation again occurs; and many unnecessary words would have been spared on the pretended difference in the stems of Ferns if the formation from which it is said to deviate (viz. the dicotyledonous stem) had been studied, not in a limited consideration of the Oak or the Lime, but in the various types of the different families. I believe it would not be very difficult for me to demonstrate all the modifications of the woody tissue of ferns, which do not depend on the closing up of the vascular bundles, but only on number, situation and mutual combination, as occurring in all essential points in the *Euphorbiaceæ* or the *Cacteæ*.

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B. In every case where vascular bundles go off to a peripherical organ, they must decussate with the subsequently

originated parts, which are formed exteriorly to the point of departure. This is already evident without any examination, and is so far from being a peculiarity of growth of the Monocotyledons, that from this alone one might already have ventured with security to conclude the non-existence of the pretended Endogeneity. But it is most strikingly to be observed in the separated closed vascular bundles of the Monocotyledons; although exceedingly well also in other cases, as for instance in old *Melocacti*, *Echinocacti*, and *Mammillariæ*.

C. But here the most important circumstance is whether the interfoliar parts are longitudinally developed or not. In the first case all the new parts originating on the surface (whether it be new vascular bundles or the continued development of old ones) serve naturally to add to the thickness of the whole stem, without its length being in any way increased by *these* new parts. It is otherwise when the interfoliar parts remain undeveloped. Here, as far as I have hitherto been able to observe, this circumstance constantly occurs, that from the germinating plant, or the node in the act of formation, the impulse of growth, being unable to extend lengthwise, expands every following internode more and more in breadth until a certain period, so that every subsequent one projects somewhat beyond the earlier one, and thus converts the original lateral surface into an under surface. As the best example, I may here mention the development of bulbs, and of the *Melocacti*. This augmentation of the internodes continues only to a certain period, namely, till the plant has in this manner formed for itself a sufficiently broad basis. From this time the new internode no longer expands itself beyond the old; and a stem gradually increasing in height, but usually not increasing any further in thickness, originates through the continued deposition of the interfoliar parts, resembling hollow cones, on one another. A repetition of the gradual expansion of the internodes just described occurs as an exception in the tumid forms of the palm stems. For the study of this form of stem in the Monocotyledons, I would recommend to those who have not palms at hand the *Allium strictum* and *senescens*, &c, as they are in reality palm stems in miniature.

From this mode of formation there naturally follows in those

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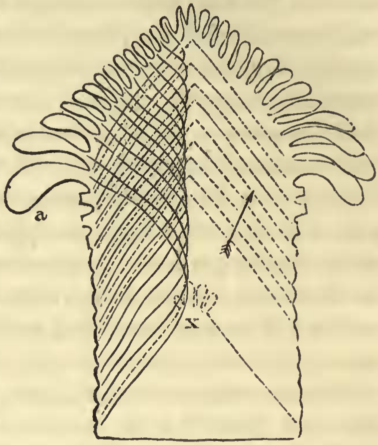
plants with closed vascular bundles the arch-formed course peculiar to the vascular bundles of the peripherical parts, which is easily made evident by a diagram of the construction of such a stem, as in the annexed Figure, where the dotted lines represent the limits of the mass (the hollow cone) belonging to each interfolial part, and the arrow denotes the direction which does not exactly correspond to the direction from within outwards in a developed stem, but combines this and the other direction from above downwards, each cone being at the same time a newly deposited part directed outwardly and a new internode added superiorly. Now every leaf (*a*) has originally its position on the apex (*x*) of the hollow cone, which originated contemporaneously with it, and in which those vascular bundles belonging to the leaves naturally proceed obliquely from the periphery inwards and upwards to the leaf, and consequently to the axis of the stem (*x*). From this position the leaf is now in consequence of the continued formation gradually pushed towards the periphery, which course its vascular bundles must follow, as they perforate all the succeeding cones just as a branch of one of our forest trees breaks through the subsequent annual zones; whence it results that the second portion of the arc is formed from within obliquely outwards and upwards. Now whether the arc is longer or shorter, or what is the same thing, more or less curved, depends principally on the shape of the recently superposed cone, i. e. on the terminal shoot. The more acute the terminal bud the longer the curve, as in most of the Palms; and the flatter it is the shorter and more curved is the arc, as in most Monocotyledonous Rhizomes.



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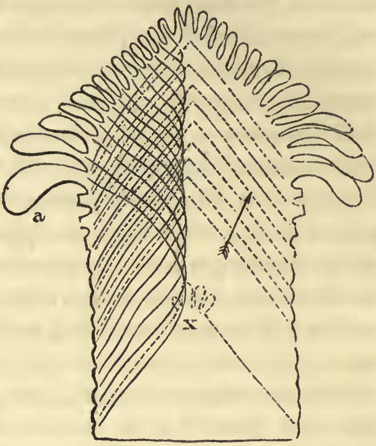

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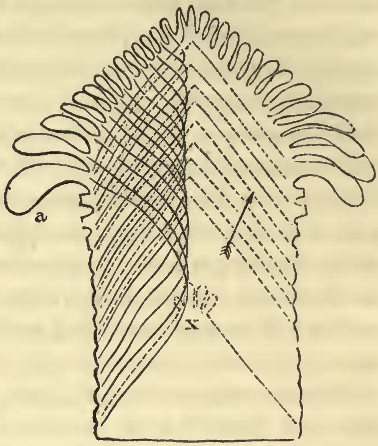

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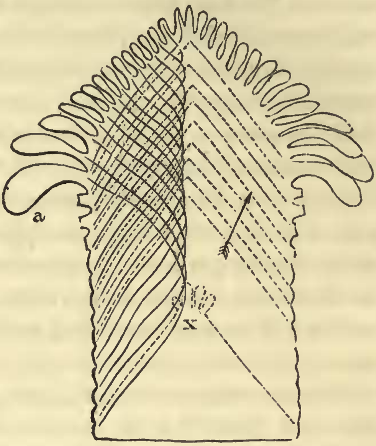

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curved course of the vascular bundles as a primary distinction between the Monocotyledons and Dicotyledons, for this is dependent on two other relations, that of the closed vascular bundles and the undeveloped internodes; consequently it would on the one hand be present in the Dicotyledons if they had closed vascular bundles, and on the other would not belong generally to the monocotyledonous stem, but only to that with undeveloped internodes.

D. Now from a combination of the circumstances related under *A.* and *C.* there originates in the *simple* closed circle of vascular bundles and proportionally large leaf-bases, for the closed vascular bundles, the form of the Fern-stem, and for the unclosed that of the Cactean stem: the latter repeats nearly all the relations of the Fern-stem, only always above the earth.

4. In the dicotyledonous structure of stems many diversities still result from the hypertrophy of the pith, the bark, or both, as for instance in the *Euphorbiæ*, *Cacteæ*, many tubers, *e. g. Solanum tuberosum*, and particularly also the *Cycadeæ*, the structure of whose stem has only the most superficial resemblance to that of the Palms, and is certainly more nearly allied to that of the Fern stems, but differs essentially from them by the unlimited vascular bundles, and approaches far more to the *Cacteæ*.

5. Lastly, the modification of the cells composing the woody bundles, whether originally or at a subsequent stage of development, differs extremely, much more indeed than hitherto believed. The light wood of the *Avicenniæ* consists almost wholly of porous vessels; the equally light and soft wood of *Bombax pentandra* consists almost entirely of parenchyma, spiral, circular and reticulate vessels, and rarely of prosenchyma occurring in the exterior part of the annual rings. The wood of the *Melocacti*, *Mammillariæ* and *Echinocacti* consists entirely of peculiar short broad thin-walled cells, terminating above and below in an obtuse conical form, with very thick annular or spiral fibrous cells (deposited on their narrow margin), like those which Meyen has represented in his 'Phytotomie' of *Opuntia cylindrica*, where they occur, as in most of the *Opuntiæ*, though in less abundance, at the coarctations of the joints. It is well known that in the *Coniferæ*

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and *Cycadeæ* the cells which form the wood develope uniformly, and not as in many other kinds of wood separating into prosenchyma and vessels. In many plants the earliest spiral vessels of the medullary sheath, in consequence of the great longitudinal expansion of the cells, become changed into annular vessels, in which form they remain ; in other plants the spiral vessels do not show this tendency, notwithstanding the great extension they have to undergo ; they are then frequently elongated with their cell to such a degree that they appear only like a thread lying in an intercellular passage, and they are very frequently entirely reabsorbed. This may be beautifully observed in *Opuntia monacantha, cylindrica, Mammillaria simplex, Helleborus fœtidus*, &c. May not this be the reason why we in many cases no longer find genuine *spiroides* in the developed stem, even in the *corona medullaris* ?

The study of the organization of stems is still a boundless field for careful research; so far as I know no one has yet given a true explanation of that frequent formation in the family of the *Sapindaceæ*, where in one stem we meet with several centra for the formation of wood, only one of which occupies the axis of the stem. Likewise very little that is satisfactory is known of the peculiar structure of the stem of the *Phytocrene* (Wall.), or of the analogous forms frequently occurring in the family of the *Bignoniaceæ*,—forms which cannot be described by words, for which reason I cursorily refer to Lindley, 'Introduction to Botany,' p. 79, fig. 36, where a similar structure, stated to be from a *Passiflora*, is represented.

XXVII.—*On the Mycology of the neighbourhood of Bristol.* By Mr. Henry Oxley Stephens.

To the Editors of the Annals of Natural History.

Gentlemen,

I do not know whether you will consider the following Mycological Notices of sufficient importance as to give them a

and *Cycadeæ* the cells which form the wood develope uniformly, and not as in many other kinds of wood separating into prosenchyma and vessels. In many plants the earliest spiral vessels of the medullary sheath, in consequence of the great longitudinal expansion of the cells, become changed into annular vessels, in which form they remain ; in other plants the spiral vessels do not show this tendency, notwithstanding the great extension they have to undergo ; they are then frequently elongated with their cell to such a degree that they appear only like a thread lying in an intercellular passage, and they are very frequently entirely reabsorbed. This may be beautifully observed in *Opuntia monacantha, cylindrica, Mammillaria simplex, Helleborus fœtidus*, &c. May not this be the reason why we in many cases no longer find genuine *spiroides* in the developed stem, even in the *corona medullaris* ?

The study of the organization of stems is still a boundless field for careful research; so far as I know no one has yet given a true explanation of that frequent formation in the family of the *Sapindaceæ*, where in one stem we meet with several centra for the formation of wood, only one of which occupies the axis of the stem. Likewise very little that is satisfactory is known of the peculiar structure of the stem of the *Phytocrene* (Wall.), or of the analogous forms frequently occurring in the family of the *Bignoniaceæ*,—forms which cannot be described by words, for which reason I cursorily refer to Lindley, 'Introduction to Botany,' p. 79, fig. 36, where a similar structure, stated to be from a *Passiflora*, is represented.

XXVII.—*On the Mycology of the neighbourhood of Bristol.* By Mr. Henry Oxley Stephens.

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